

# **Behavioral Finance and Wealth Management**

*How to Build Optimal Portfolios That  
Account for Investor Biases*

MICHAEL M. POMPIAN



WILEY

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*This book is dedicated to my wife, Angela. I couldn't  
have done this without her.*





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# Preface

If successful, this book will change your idea about what an optimal investment portfolio is. It is intended to be a guide both to understanding irrational investor behavior and to creating individual investors' portfolios that account for these irrational behaviors. In this book, an optimal portfolio lies on the efficient frontier, but it may move up or down that frontier depending on the individual needs and preferences of each investor. When applying behavior finance to real-world investment programs, an optimal portfolio is one with which an investor can comfortably live, so that he or she has the ability to adhere to his or her investment program, while at the same time reach long-term financial goals.

Given the run-up in stock prices in the late 1990s and the subsequent popping of the technology bubble, understanding irrational investor behavior is as important as it has ever been. This is true not only for the markets in general but most especially for individual investors. This book will be used primarily by financial advisors, but it can also be effectively used by sophisticated individual investors who wish to become more introspective about their own behaviors and to truly try to understand how to create a portfolio that works for them. The book is not intended to sit on the polished mahogany bookcases of successful advisors as a showpiece: It is a guidebook to be used and implemented in the pursuit of building better portfolios.

The reality of today's advisor-investor relationship demands a better understanding of individual investors' behavioral biases and an awareness of these biases when structuring investment portfolios. Advisors need to focus more acutely on why their clients make the decisions they do and whether behaviors need to be modified or adapted to. If advisors can successfully accomplish this difficult task, the relationship will be strengthened considerably, and advisors can enjoy the loyalty of clients who end the search for a new advisor.

In the past 250 years, many schools of economic and social thought have been developed, some of which have come and gone, while others are still very relevant today. We will explore some of these ideas to give some perspective on where behavioral finance is today. In the past 25 years, the interest in behavioral finance as a discipline has not only emerged but rather exploded onto the scene, with many articles written by very prestigious authors in prestigious publications. We will review some of the key people who have shaped the current body of behavioral finance thinking and review work done by them. And then the intent is to take the study of behavioral finance to another level: developing a common understanding (definition) of behavioral biases in terms that advisors and investors can understand and demonstrating how biases are to be used in practice through the use of case studies—a “how-to” of behavioral finance. We will also explore some of the new frontiers of behavioral finance, things not even discussed by today’s advisors that may be common knowledge in 25 years.

## **A CHALLENGING ENVIRONMENT**

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Investment advisors have never had a more challenging environment to work in. Many advisors thought they had found nirvana in the late 1990s, only to find themselves in quicksand in 2001 and 2002. And in today’s low-return environment, advisors are continuously peppered with vexing questions from their clients:

“Why is this fund not up as much as that fund?”

“The market has not done well the past quarter—what should we do?”

“Why is asset allocation so important?”

“Why are we investing in alternative investments?”

“Why aren’t we investing in alternative investments?”

“Why don’t we take the same approach to investing in college money and retirement money?”

“Why don’t we buy fewer stocks so we can get better returns?”

Advisors need a handbook that can help them deal with the behavioral and emotional sides of investing so that they can help their clients understand why they have trouble sticking to a long-term program of investing.

## WHY THIS BOOK?

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This book was conceived only after many hours, weeks, and years of researching, studying, and applying behavioral finance concepts to real-world investment situations. When I began taking an interest in how portfolios might be adjusted for behavioral biases back in the late 1990s, when the technology bubble was in full force, I sought a book like this one but couldn't find one. I did not set a goal of writing a book at that time; I merely took an interest in the subject and began reading. It wasn't until my wife, who was going through a job transition, came home one night talking about the Myers-Briggs personality type test she took that I began to consider the idea of writing about behavioral finance. My thought process at the time was relatively simple: Doesn't it make sense that people of differing personality types would want to invest differently? I couldn't find any literature on this topic. So, with the help of a colleague on the private wealth committee at NYSSA (the New York Society of Securities Analysts—the local CFA chapter), John Longo, Ph.D., I began my quest to write on the practical application of behavioral finance. Our paper, entitled “A New Paradigm for Practical Application of Behavioral Finance: Correlating Personality Type and Gender with Established Behavioral Biases,” was ultimately published in the *Journal of Wealth Management* in the fall of 2003 and, at the time, was one of the most popular articles in that issue. Several articles later, I am now writing this book. I am a practitioner at the forefront of the practical application of behavioral finance.

As a wealth manager, I have found the value of understanding the behavioral biases of clients and have discovered some ways to adjust investment programs for these biases. You will learn about these methods. By writing this book, I hope to spread the knowledge that I have developed and accumulated so that other advisors and clients can benefit from these insights. Up until now, there has not been a book available that has served as a guide for the advisor or sophisticated investor to create portfolios that account for biased investor behavior. My fervent hope is that this book changes that.

## WHO SHOULD USE THIS BOOK?

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The book was originally intended as a handbook for wealth management practitioners who help clients create and manage investment portfolios.

As the book evolved, it became clear that individual investors could also greatly benefit from it. The following are the target audience for the book:

- *Traditional Wire-house Financial Advisors.* A substantial portion of the wealth in the United States and abroad is in the very capable hands of traditional wire-house financial advisors. From a historical perspective, these advisors have not traditionally been held to a fiduciary standard, as the client relationship was based primarily on financial planning being “incidental” to the brokerage of investments. In today’s modern era, many believe that this will have to change, as “wealth management,” “investment advice,” and brokerage will merge to become one. And the change is indeed taking place within these hallowed organizations. Thus, it is crucial that financial advisors develop stronger relationships with their clients because advisors will be held to a higher standard of responsibility. Applying behavioral finance will be a critical step in this process as the financial services industry continues to evolve.
- *Private Bank Advisors and Portfolio Managers.* Private banks, such as U.S. Trust, Bessemer Trust, and the like, have always taken a very solemn, straightlaced approach to client portfolios. Stocks, bonds, and cash were really it for hundreds of years. Lately, many of these banks have added such nontraditional offerings as venture capital, hedge funds, and others to their lineup of investment product offerings. However, many clients, including many extremely wealthy clients, still have the big three—stocks, bonds, and cash—for better or worse. Private banks would be well served to begin to adopt a more progressive approach to serving clients. Bank clients tend to be conservative, but they also tend to be trusting and hands-off clients. This client base represents a vast frontier to which behavioral finance could be applied because these clients either do not recognize that they do not have an appropriate portfolio or tend to recognize only too late that they should have been more or less aggressive with their portfolios. Private banks have developed a great trust with their clients and should leverage this trust to include behavioral finance in these relationships.
- *Independent Financial Advisors.* Independent registered representatives (wealth managers who are Series 7 registered but who are not

affiliated with major stock brokerage firms) have a unique opportunity to apply behavioral finance to their clients. They are typically not part of a vast firm and may have fewer restrictions than their wire-house brethren. These advisors, although subject to regulatory scrutiny, can for the most part create their own ways of serving clients; and with many seeing that great success is growing their business, they can deepen and broaden these relationships by including behavioral finance.

- *Registered Investment Advisors.* Of all potential advisors that could include behavioral finance as a part of the process of delivering wealth management services, it is my belief that registered investment advisors (RIAs) are well positioned to do so. Why? Because RIAs are typically smaller firms, which have fewer regulations than other advisors. I envision RIAs asking clients, “How do you feel about this portfolio?” “If we changed your allocation to more aggressive, how might your behavior change?” Many other types of advisors cannot and will not ask these types of questions for fear of regulatory or other matters, such as pricing, investment choices, or others.
- *Consultants and Other Financial Advisors.* Consultants to individual investors, family offices, or other entities that invest for individuals can also greatly benefit from this book. Understanding how and why their clients make investment decisions can greatly impact the investment choices consultants can recommend. When the investor is happy with his or her allocation and feels good about the selection of managers from a psychological perspective, the consultant has done his or her job and will likely keep that client for the long term.
- *Individual Investors.* For those individual investors who have the ability to look introspectively and assess their behavioral biases, this book is ideal. Many individual investors who choose either to do it themselves or to rely on a financial advisor only for peripheral advice often find themselves unable to separate their emotions from the investment decision-making process. This does not have to be a permanent condition. By reading this book and delving deep into their behaviors, individual investors can indeed learn to modify behaviors and to create portfolios that help them stick to their long-term investment programs and, thus, reach their long-term financial goals.

## WHEN TO USE THIS BOOK?

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First and foremost, this book is generally intended for those who want to apply behavioral finance to the asset allocation process to create better portfolios for their clients or themselves. This book can be used:

- *When there is an opportunity to create or re-create an asset allocation from scratch.* Advisors know well the pleasure of having only cash to invest for a client. The lack of such baggage as emotional ties to certain investments, tax implications, and a host of other issues that accompany an existing allocation is ideal. The time to apply the principles learned in this book is at the moment that one has the opportunity to invest only cash or to clean house on an existing portfolio.
- *When a life trauma has taken place.* Advisors often encounter a very emotional client who is faced with a critical investment decision during a traumatic time, such as a divorce, a death in the family, or job loss. These are the times that the advisor can add a significant amount of value to the client situation by using the concepts learned in this book.
- *When a concentrated stock position is held.* When a client holds a single stock or other concentrated stock position, emotions typically run high. In my practice, I find it incredibly difficult to get people off the dime and to diversify their single-stock holdings. The reasons are well known: “I know the company, so I feel comfortable holding the stock,” “I feel disloyal selling the stock,” “My peers will look down on me if I sell any stock,” “My grandfather owned this stock, so I will not sell it.” The list goes on and on. This is the exact time to employ behavioral finance. Advisors must isolate the biases that are being employed by the client and then work together with the client to relieve the stress caused by these biases. This book is essential in these cases.
- *When retirement age is reached.* When a client enters the retirement phase, behavioral finance becomes critically important. This is so because the portfolio structure can mean the difference between living a comfortable retirement and outliving one’s assets. Retirement is typically a time of reassessment and reevaluation and is a great opportunity for the advisor to strengthen and deepen the relationship to include behavioral finance.



- *When wealth transfer and legacy are being considered.* Many wealthy clients want to leave a legacy. Is there any more emotional an issue than this one? Having a frank discussion about what is possible and what is not possible is difficult and is often fraught with emotional crosscurrents that the advisor would be well advised to stand clear of. However, by including behavioral finance into the discussion and taking an objective, outside-counselor's viewpoint, the client may well be able to draw his or her own conclusion about what direction to take when leaving a legacy.
- *When a trust is being created.* Creating a trust is also a time of emotion that may bring psychological biases to the surface. Mental accounting comes to mind. If a client says to himself or herself, "Okay, I will have this pot of trust money over here to invest, and that pot of spending money over there to invest," the client may well miss the big picture of overall portfolio management. The practical application of behavioral finance can be of great assistance at these times.

Naturally, there are many more situations not listed here that can arise where this book will be helpful.

## PLAN OF THE BOOK

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Part One of the book is an introduction to the practical application of behavioral finance. These chapters include an overview of what behavioral finance is at an individual level, a history of behavioral finance, and an introduction to incorporating investor behavior into the asset allocation process for private clients. Part Two of the book is a comprehensive review of some of the most commonly found biases, complete with a general description, technical description, practical application, research review, implications for investors, diagnostic, and advice. Part Three of the book takes the concepts presented in Parts One and Two and pulls them together in the form of case studies that clearly demonstrate how practitioners and investors use behavioral finance in real-world settings with real-world investors. Part Four offers a look at some special topics in the practical application of behavioral finance, with an eye toward the future of what might lie in store for the next phase of the topic.



# Acknowledgments

I would like to acknowledge all my colleagues, both present and past, who have contributed to broadening my knowledge not only in the topic of this book but also in wealth management in general. You know who you are. In particular, I would like thank my proofreaders Sarah Rogers and Lin Ruan at Dartmouth College. I would also like to acknowledge all of the behavioral finance academics and professionals who have granted permission for me to use their brilliant work. Finally, I would like to thank my parents and extended family for giving me the support to write this book.



PART

# One

## **Introduction to the Practical Application of Behavioral Finance**



# What Is Behavioral Finance?

*People in standard finance are rational. People in behavioral finance are normal.*

—Meir Statman, Ph.D., Santa Clara University

**T**o those for whom the role of psychology in finance is self-evident, both as an influence on securities markets fluctuations and as a force guiding individual investors, it is hard to believe that there is actually a debate about the relevance of behavioral finance. Yet many academics and practitioners, residing in the “standard finance” camp, are not convinced that the effects of human emotions and cognitive errors on financial decisions merit a unique category of study. Behavioral finance adherents, however, are 100 percent convinced that an awareness of pertinent psychological biases is crucial to finding success in the investment arena and that such biases warrant rigorous study.

This chapter begins with a review of the prominent researchers in the field of behavioral finance, all of whom support the notion of a distinct behavioral finance discipline, and then reviews the key drivers of the debate between standard finance and behavioral finance. By doing so, a common understanding can be established regarding what is meant by *behavioral finance*, which leads to an understanding of the use of this term as it applies directly to the practice of wealth management. This chapter finishes with a summary of the role of behavioral finance in

dealing with private clients and how the practical application of behavioral finance can enhance an advisory relationship.

## **BEHAVIORAL FINANCE: THE BIG PICTURE**

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*Behavioral finance*, commonly defined as the application of psychology to finance, has become a very hot topic, generating new credence with the rupture of the tech-stock bubble in March of 2000. While the term *behavioral finance* is bandied about in books, magazine articles, and investment papers, many people lack a firm understanding of the concepts behind behavioral finance. Additional confusion may arise from a proliferation of topics resembling behavioral finance, at least in name, including behavioral science, investor psychology, cognitive psychology, behavioral economics, experimental economics, and cognitive science. Furthermore, many investor psychology books that have entered the market recently refer to various aspects of behavioral finance but fail to fully define it. This section will try to communicate a more detailed understanding of behavioral finance. First, we will discuss some of the popular authors in the field and review the outstanding work they have done (not an exhaustive list), which will provide a broad overview of the subject. We will then examine the two primary subtopics in behavioral finance: Behavioral Finance Micro and Behavioral Finance Macro. Finally, we will observe the ways in which behavioral finance applies specifically to wealth management, the focus of this book.

### **Key Figures in the Field**

In the past 10 years, some very thoughtful people have contributed exceptionally brilliant work to the field of behavioral finance. Some readers may be familiar with the work *Irrational Exuberance*, by Yale University professor Robert Shiller, Ph.D. Certainly, the title resonates; it is a reference to a now-famous admonition by Federal Reserve chairman Alan Greenspan during his remarks at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research in Washington, D.C., on December 5, 1996. In his speech, Greenspan acknowledged that the ongoing economic growth spurt had been accompanied by low inflation, generally an indicator of stability. “But,” he posed, “how do we know when irrational exuberance has un-



duly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade?”<sup>1</sup> In Shiller’s *Irrational Exuberance*, which hit bookstores only days before the 1990s market peaked, Professor Shiller warned investors that stock prices, by various historical measures, had climbed too high. He cautioned that the “public may be very disappointed with the performance of the stock market in coming years.”<sup>2</sup> It was reported that Shiller’s editor at Princeton University Press rushed the book to print, perhaps fearing a market crash and wanting to warn investors. Sadly, however, few heeded the alarm. Mr. Greenspan’s prediction came true, and the bubble burst. Though the correction came later than the Fed chairman had foreseen, the damage did not match the aftermath of the collapse of the Japanese asset price bubble (the specter Greenspan raised in his speech).

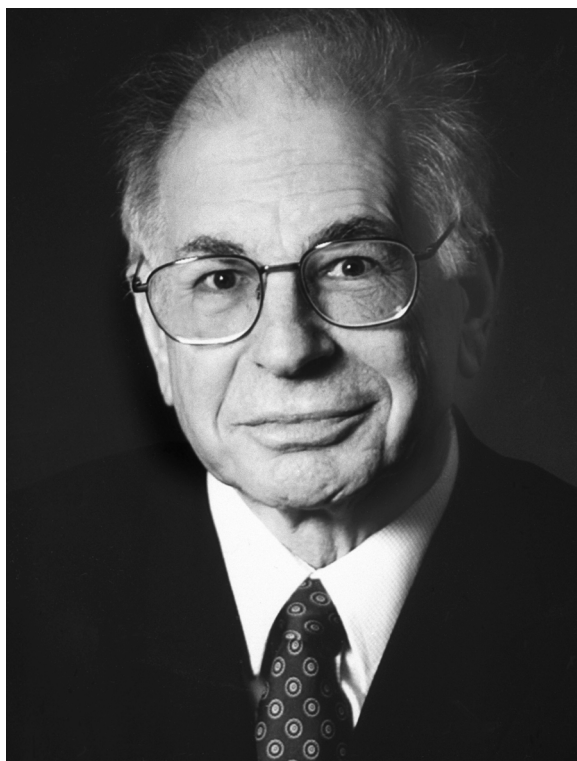
Another high-profile behavioral finance proponent, Professor Richard Thaler, Ph.D., of the University of Chicago Graduate School of Business, penned a classic commentary with Owen Lamont entitled “Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs,”<sup>3</sup> also on the general topic of irrational investor behavior set amid the tech bubble. The work related to 3Com Corporation’s 1999 spin-off of Palm, Inc. It argued that if investor behavior was indeed rational, then 3Com would have sustained a positive market value for a few months after the Palm spin-off. In actuality, after 3Com distributed shares of Palm to shareholders in March 2000, Palm traded at levels exceeding the inherent value of the shares of the original company. “This would not happen in a rational world,” Thaler noted. (Professor Thaler is the editor of *Advances in Behavioral Finance*, which was published in 1993.)

One of the leading authorities on behavioral finance is Professor Hersh Shefrin, Ph.D., a professor of finance at the Leavey School of Business at Santa Clara University in Santa Clara, California. Professor Shefrin’s highly successful book *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing* (Harvard Business School Press, 2000), also forecast the demise of the asset bubble. Shefrin argued that investors have weighed positive aspects of past events with inappropriate emphasis relative to negative events. He observed that this has created excess optimism in the markets. For Shefrin, the meltdown in 2000 was clearly in the cards. Professor Shefrin is also the author of many additional articles and papers that have contributed significantly to the field of behavioral finance.

Two more academics, Andrei Shleifer, Ph.D., of Harvard University, and Meir Statman, Ph.D., of the Leavey School of Business, Santa Clara University, have also made significant contributions. Professor Shleifer published an excellent book entitled *Inefficient Markets: An Introduction to Behavioral Finance* (Oxford University Press, 2000), which is a must-read for those interested specifically in the efficient market debate. Statman has authored many significant works in the field of behavioral finance, including an early paper entitled “Behavioral Finance: Past Battles and Future Engagements,”<sup>4</sup> which is regarded as another classic in behavioral finance research. His research posed decisive questions: What are the cognitive errors and emotions that influence investors? What are investor aspirations? How can financial advisors and plan sponsors help investors? What is the nature of risk and regret? How do investors form portfolios? How important are tactical asset allocation and strategic asset allocation? What determines stock returns? What are the effects of sentiment? Statman produces insightful answers on all of these points. Professor Statman has won the William F. Sharpe Best Paper Award, a Bernstein Fabozzi/Jacobs Levy Outstanding Article Award, and two Graham and Dodd Awards of Excellence.

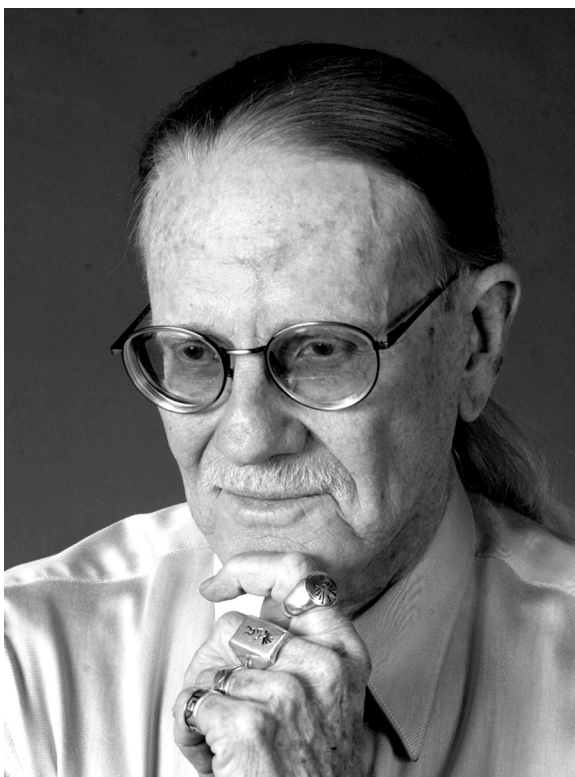
Perhaps the greatest realization of behavioral finance as a unique academic and professional discipline is found in the work of Daniel Kahneman and Vernon Smith, who shared the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel 2002. The Nobel Prize organization honored Kahneman for “having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty.” Smith similarly “established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms,” garnering the recognition of the committee.<sup>5</sup>

Professor Kahneman (Figure 1.1) found that under conditions of uncertainty, human decisions systematically depart from those predicted by standard economic theory. Kahneman, together with Amos Tversky (deceased in 1996), formulated *prospect theory*. An alternative to standard models, prospect theory provides a better account for observed behavior and is discussed at length in later chapters. Kahneman also discovered that human judgment may take heuristic shortcuts that systematically diverge from basic principles of probability. His work has inspired a new generation of research employing insights from cognitive psychology to enrich financial and economic models.



**FIGURE 1.1** Daniel Kahneman  
Prize winner in Economic Sciences 2002. © The Nobel  
Foundation

Vernon Smith (Figure 1.2) is known for developing standards for laboratory methodology that constitute the foundation for experimental economics. In his own experimental work, he demonstrated the importance of alternative market institutions, for example, the rationale by which a seller's expected revenue depends on the auction technique in use. Smith also performed "wind-tunnel tests" to estimate the implications of alternative market configurations before such conditions are implemented in practice. The deregulation of electricity markets, for example, was one scenario that Smith was able to model in advance. Smith's work has been instrumental in establishing experiments as an essential tool in empirical economic analysis.



**FIGURE 1.2** Vernon L. Smith  
Prize winner in Economic Sciences 2002. © The Nobel  
Foundation.

### **Behavioral Finance Micro versus Behavioral Finance Macro**

As we have observed, behavioral finance models and interprets phenomena ranging from individual investor conduct to market-level outcomes. Therefore, it is a difficult subject to define. For practitioners and investors reading this book, this is a major problem, because our goal is to develop a common vocabulary so that we can apply to our benefit the very valuable body of behavioral finance knowledge. For purposes of this book, we adopt an approach favored by traditional economics textbooks; we break our topic down into two subtopics: Behavioral Finance Micro and Behavioral Finance Macro.

1. Behavioral Finance Micro (BFMI) examines *behaviors or biases of individual investors* that distinguish them from the rational actors envisioned in classical economic theory.
2. Behavioral Finance Macro (BFMA) detects and describe *anomalies* in the efficient market hypothesis that behavioral models may explain.

As wealth management practitioners and investors, our primary focus will be BFMI, the study of individual investor behavior. Specifically, we want to identify relevant psychological biases and investigate their influence on asset allocation decisions so that we can manage the effects of those biases on the investment process.

Each of the two subtopics of behavioral finance corresponds to a distinct set of issues within the standard finance versus behavioral finance discussion. With regard to BFMA, the debate asks: Are markets “efficient,” or are they subject to behavioral effects? With regard to BFMI, the debate asks: Are individual investors perfectly rational, or can cognitive and emotional errors impact their financial decisions? These questions are examined in the next section of this chapter; but to set the stage for the discussion, it is critical to understand that much of economic and financial theory is based on the notion that individuals act rationally and consider all available information in the decision-making process. In academic studies, researchers have documented abundant evidence of irrational behavior and repeated errors in judgment by adult human subjects.

Finally, one last thought before moving on. It should be noted that there is an entire body of information available on what the popular press has termed “the psychology of money.” This subject involves individuals’ relationship with money—how they spend it, how they feel about it, and how they use it. There are many useful books in this area; however, this book will not focus on these topics.

## **THE TWO GREAT DEBATES OF STANDARD FINANCE VERSUS BEHAVIORAL FINANCE**

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This section reviews the two basic concepts in standard finance that behavioral finance disputes: rational markets and rational economic man. It also covers the basis on which behavioral finance proponents challenge each tenet and discusses some evidence that has emerged in favor of the behavioral approach.

## Overview

On Monday, October 18, 2004, a very significant article appeared in the *Wall Street Journal*. Eugene Fama, one of the pillars of the efficient market school of financial thought, was cited admitting that stock prices could become “somewhat irrational.”<sup>6</sup> Imagine a renowned and rabid Boston Red Sox fan proposing that Fenway Park be renamed *Steinbrenner Stadium* (after the colorful New York Yankees owner), and you may begin to grasp the gravity of Fama’s concession. The development raised eyebrows and pleased many behavioralists. (Fama’s paper “Market Efficiency, Long-Term Returns, and Behavioral Finance” noting this concession at the Social Science Research Network is one of the most popular investment downloads on the web site.) The *Journal* article also featured remarks by Roger Ibbotson, founder of Ibbotson Associates: “There is a shift taking place,” Ibbotson observed. “People are recognizing that markets are less efficient than we thought.”<sup>7</sup>

As Meir Statman eloquently put it, “Standard finance is the body of knowledge built on the pillars of the arbitrage principles of Miller and Modigliani, the portfolio principles of Markowitz, the capital asset pricing theory of Sharpe, Lintner, and Black, and the option-pricing theory of Black, Scholes, and Merton.”<sup>8</sup> Standard finance theory is designed to provide mathematically elegant explanations for financial questions that, when posed in real life, are often complicated by imprecise, inelegant conditions. The standard finance approach relies on a set of assumptions that oversimplify reality. For example, embedded within standard finance is the notion of “Homo Economicus,” or rational economic man. It prescribes that humans make perfectly rational economic decisions at all times. Standard finance, basically, is built on rules about how investors “should” behave, rather than on principles describing how they actually behave. Behavioral finance attempts to identify and learn from the human psychological phenomena at work in financial markets and within individual investors. Behavioral finance, like standard finance, is ultimately governed by basic precepts and assumptions. However, standard finance grounds its assumptions in idealized financial behavior; behavioral finance grounds its assumptions in observed financial behavior.

## Efficient Markets versus Irrational Markets

During the 1970s, the standard finance theory of market efficiency became the model of market behavior accepted by the majority of academ-